SRF MEETING

Date: 17 May 2010

Participants

Present: Vladislav Benda, Olivier Brunner, Pierre Maesen, Eric Montesinos, Vittorio Parma (part time), Karl Schirm, Mathieu Therasse, Bruno Vullierme, Udo Wagner (part time), Wolfgang Weingarten (chair)
Excused:

Agenda

1. Experience on clean work, assembly and related shortcomings (P. Maesen);
2. Report on the actual status of the refurbishment work (M. Therasse);
3. Proposals for the cryogenic line and interface to the cryostat (B. Vullierme, V. Benda);
4. Needs for the power coupler cleaning, assembly, etc., and present shortcomings in CERN s installations (E. Montesinos.

Minutes (DRAFT)

1. Experience on clean work, assembly and related shortcomings

P. Maesen gave an account on his experience on clean work mainly related to the LHC cavities and cryomodules. The main points were the distribution on different places of the clean rooms, the validation of the quality of the clean rooms (their class) about once per year, the lower requirements for the LHC cavities with respect to the gradient (about 5 MV/m), and the way that components are transported in plastic boxes (transport in metal boxes under vacuum would be preferred). Clothes inside the clean room of SM18 are kept under vacuum, and a lock with an air shower is available. W. Weingarten mentioned that the foreseen test with the beta=0.5 cavity borrowed from CEA Saclay should allow to assess the adequacy of our clean assembly to obtain high gradients as envisaged for the SPL study (25 MV/m).

2. Report on the actual status of the refurbishment work

Reference is made to the slides.

3. Proposals for the cryogenic line and interface to the cryostat

Vladislav B. and B. Vullierme presented a new concept of connecting from the side the vertical cryostats V3 and V4 with the cryogenic line. The reason is the change of the operational mode with regard to that when the LEP and LHC cavities were tested. The SPL cavities will be tested under boiling lHe at 2 K instead of 4.5 K (as for LHC and LEP cavities). Therefore, in order to provide suficient cooling for the radiation shields of the vertical cryostats, a new concept was presented. It foresees that active cooling of the radiation shields which requires a modification of the existing cryostats V3 and V4. The discussion concentrated then on the dynamic heat load under the different opational modes, and it was suggested to check the reuirments. Reference is made to the slides and to the Functional Specification, published earlier.

P.S. Related information collected after the meeting:

- Remark from Wolfgang W.: The numbers (Table 7 on page 11 of the Functional Specification (EDMS 107151) are realistic. However, since the scope of the SPL study is now focused on high power instead of low power, i.e. 5 % and no longer 0.2 % duty cycle, the cryogenic load in bunker for the SPL cryomodule must be multiplied by a factor of 5/0.2 = 25. That means 75 Watt instead of 3 W for one cavity and 4 x 75 W = 300 W for a simultaneous test of all the 4 cavities per short cryomodule.

- Answer of Bruno V.: I rechecked the figures for the proposed counterflow heat exchanger: the LHC HXD which is shown in the 3D views is designed for 8 g/s. This means that its capacity is sufficient to cope with the very max power of 175W at 2 K in a vertical cryostat. For the bunker, with 300 W for the SPL cryomodule, we have to install a 15 g/s heat exchanger. No technical problem expected.

4. Needs for the power coupler cleaning, assembly, etc., and present shortcomings in CERN s installations

Eric M. presented several critical remarks from external participants at the occasion of the SPL power coupler workshop. In consequence he made a proposal on how to modify CERN's clean room and assembly installations. The main purpose is to group the power coupler cleaning and assembly around the existing SM18 clean room. Reference is made to the slides .

The budget and manpower requests, if applicable, related to topics 3 and 4, must be specified and should match with the allocations via the SPL study.

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